Mexican populations at 3200 m on the slopes of Popocatepetl and 3000 m on Cerro Ajusco were examined cytologically ($2n = 12$; México, Distrito Federal, Slopes of Cerro Ajusco, 2 km E of Estacion La Cima on Hwy. 95, *Miller 568;* Estado México: Slopes of Popocatepetl, 12.5 km E of Hwy. 115 junction on the road from Amecameca to Tlamacas, *Miller 570;* Slopes of Popocatepetl, 5.5 km W of Paso de Cortez on the road from Tlamacas to Amecameca, *Miller 571;* Municipio Amecameca, *Rodriguez 1460*). These populations are morphologically indistinguishable from diploid *C. perfoliata* ssp. *perfoliata* found in coastal California and on the Channel Islands. In contrast to *C. rubra*, which is common in drier northern montane and transmontane coniferous woodlands, diploid *C. perfoliata* ssp. *perfoliata* is more southern in distribution, ranging from coastal and cismontane California, through the Sonoran Desert, to high elevation coniferous forests of Mexico and Guatemala. Herbarium specimens examined from Durango, Queretaro, Hidalgo, Jalisco, Distrito Federal, Puebla, México, Morelos, and Cuesta El Caracol in Guatemala, indicate relative homogeneity of Mexican and Guatemalan populations, not only in their striking resemblance to the known diploid populations cited above but also in their elevational distribution and habitat preference.

Voucher specimens and permanent microslides for the chromosome counts reported here are deposited in OSC. Duplicate cytovouchers are deposited in CAS and ENCB. I am grateful to Dr. J. Rzedowski and Miss L. S. Rodríguez of the Escuela Nacional de Ciencias Biologicas for their help with field work and to the National Science Foundation for financial assistance (Doctoral Dissertation Research Grant DEB 76–06048).—JOHN M. MILLER, Department of Botany and Plant Pathology, Oregon State University, Corvallis 97331.

NOMENCLATURAL CHANGES IN SPILANTHES, LYCOPERSICON, AND OPUNTIA FOR THE GALÁPAGOS ISLANDS.—Research on the endemic flora of the archipelago reveals that the following nomenclatural changes must be made:

(1). *Spilanthes diffusa* Hook. f. (Trans. Linn. Soc. London 20:214. 1847) is a later homonym of *S. diffusa* Poepp. & Endl. (Nov. Gen. Sp. Pl. 3:50. 1843). No other specific epithet being available for the former taxon, the following is proposed: **Spilanthes darwinii** D. M. Porter, *nomen novum* [Holotype: *Darwin,* end of Sept. 1835, Charles Island (CGE).].

(2). The widespread Galápagos tomato (*Lycopersicon cheesmanii* Riley) has long been recognized to consist of two infraspecific taxa, f. *cheesmanii* and f. *minor* (Hook. f.) Muller. However, recognition at a higher taxonomic rank is warranted, and the following combination is proposed: **Lycopersicon cheesmanii** var. **minor** (Hook. f.) D. M. Porter, *comb. nov.* [Basionym: *Lycopersicon esculentum* var. *minor* Hook. f., Trans. Linn. Soc. London 20:202. 1847. Holotype: *Darwin,* beg. of Oct. 1835, James Island (CGE).].

(3). **Opuntia megasperma** var. **orientalis** (J. T. Howell) D. M. Porter, *status novum* [Basionym: *O. megasperma* subsp. *orientalis* J. T. Howell, Proc. Calif. Acad. Sci., ser. 4, 21:48. 1933. Holotype: *Stewart 3003,* Hood Island (CAS).]. **Opuntia echios** var. **gigantea** (J. T. Howell) D. M. Porter, *status novum* [Basionym: *O. echois* subsp. *gigantea* J. T. Howell, op. cit. 51. 1933. Holotype: *Howell 9112,* Indefatigable Island (CAS).].

These two taxa inadvertantly were included under the varietal rank in I. L. Wiggins and D. M. Porter's *Flora of the Galápagos Islands* (Stanford Univ. Press, Stanford, 1971) by E. F. Anderson and D. L. Walkington in their treatment of the Cactaceae, although new status was neither proposed nor effected. Recognition at the varietal level is desirable in order to conform with the classification of the genus in the archipelago. Where infraspecific taxa have been recognized in these species and in *O. galapageia* Hensl., they have been designated as varieties. Such trivial nomenclatural problems could be avoided if Raven, Shetler, and Taylor's "Proposals for the simplification of infraspecific terminology" (Taxon 23:828–831.

1974), which advocate recognition of a single infraspecific rank (subspecies), were incorporated into the *International Code of Botanical Nomenclature.*

A grant from the Penrose Fund of the American Philosophical Society which enabled me to examine Charles Darwin's Galápagos collections at Cambridge University and the Royal Botanic Gardens, Kew during the summer of 1976 is gratefully acknowledged.—DUNCAN M. PORTER, Department of Biology, Virginia Polytechnic Institute & State University, Blacksburg 24061.

RARE TAXA IN THE LITERATURE.—We were impressed while reading the July, 1977 issue of *Madroño* to note that three authors discussed three rare California taxa. However, we were equally impressed by the omission of any reference to the facts that these taxa are listed in the *Inventory of Rare and Endangered Vascular Plants* of the California Native Plant Society and that two of them are listed as candidates by the Office of Endangered Species, U.S. Fish and Wildlife Service, in the *Federal Register.* We respectfully submit that these omissions are serious oversights because presumably the authors have the best possible data concerning the status of the taxa they are studying relative to rarity and endangerment. Being very rare is a critical attribute of a plant possessing it.

As coordinators of the CNPS Rare Plant Project, we depend greatly upon the botanical community which includes you, the readers and writers of *Madroño* and similar publications. Please send your published and unpublished information about rare plants to either of us for use by the CNPS project.—W. ROBERT POWELL, Director, CNPS Rare Plant Inventory, Dept. of Agronomy and Range Science, Univ. of California, Davis 95616; and ALICE Q. HOWARD, Chair, CNPS Rare Plant Advisory Committee, Botany Herbarium, Univ. of California, Berkeley 94720.

POLLEN SHED AS TETRADS BY PLANTS OF ESCHSCHOLZIA CALIFORNICA (PAPAVERACEAE).—Mature pollen of *Eschscholzia,* and of the rest of the Papaveraceae, is normally shed from anthers as single grains (monads). In greenhouse-grown plants from two populations of *Eschscholzia californica* Cham. (*Clark 492*—California. Alameda Co.: ca. 2 mi SE of Livermore on S Livermore Rd, 24 May 1975; *Clark 503*—Butte Co.: Butte Canyon Rd, 0.9 mi E of junction with Manzanita Ave and Centennial Ave, 25 Jun 1975), I observed that pollen was shed not only as monads, but also as dyads, triads, and intact, generally tetrahedral tetrads. Individual plants of *Clark 492* present all monad pollen, or mixtures of monad, dyad, triad, and tetrad, or nearly all tetrad pollen. Of the two plants of *Clark 503* examined, one produced all monad pollen and the other a mixture of monad, dyad, triad, and tetrad pollen.

Scanning electron micrographs of intact pollen tetrads are presented in Fig. 1. Notice that individual grains are held together by bridges of pollen wall material. Sachar and Mohan Ram (Phytomorphology 8:114–124. 1958) state that "Wall formation [to form microspores] occurs by furrowing." In these populations furrowing evidently does not proceed to completion, leaving bridges of pollen wall and even cytoplasmic connections, which have been seen in light micrographs of pollen stained with cotton blue. Similar exine bridges have been reported in the Onagraceae (Skvarla *et al.*, Amer. J. Bot. 62:6–35. 1975) and in the fossil *Eomimosoidea* (Crepet & Dilcher, Amer. J. Bot. 64:714–725. 1977), but unlike those of *Eschscholzia,* their tetrads are also bound together at the margins of the apertures. Dyads and triads apparently result from furrowing which detaches only one or two grains from the tetrad.

Both populations have high pollen stainability in cotton blue; meiosis observed in *Clark 492* was normal. Tetrad pollen appears to be functional—pollen from an individual of *Clark 492* which sheds almost all tetrads was able to effect full seed set in other *E. californica* plants. The ability to form tetrads is evidently a heritable trait, appearing in F_1 progeny of crosses between *Clark 492* and other populations of *E. californica* and the closely related *E. mexicana* Greene, but appearing in none of